## National Institute of Child Health and Human Development

## *Intramural Research*

### Disordered Eating Behaviors and Cognitions in Children and Adolescents

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Eating disorders are fairly common among obese adults seeking obesity treatment, with the most common psychological disturbance being binge eating disorder (BED).(1) In binge eating disorder, individuals engage in recurrent episodes of eating what others consider an unusually large amount of food, accompanied by a sense of loss of control during the episodes.(2) In contrast to bulimia nervosa, those with BED do not regularly engage in compensatory behaviors, such as purging, fasting, or excessive exercise. Studies from the US, Europe, and Australia indicate that the prevalence of BED in a community adult sample is <3%, but prevalence increases as degree of obesity and intensity of required treatment increases.(1) Unlike bulimia and anorexia nervosa, BED is common in both sexes and in racial and ethnic minorities, including African American and Hispanic women.(3-5) The prevalence of BED in racial and ethnic minority children and adolescents has not been determined.

In adults participating in a very-low calorie diet program, NICHD's Unit on Growth and Obesity (UGO) has previously shown that binge eating disorder (BED) significantly affects the outcome of weight loss treatment.(6) BED in adults is also associated with significant psychopathology. Adult subjects with BED are significantly more likely than those without the disorder to have a history of major depression, panic disorder, bulimia nervosa, borderline personality disorder, and avoidant personality disorder.(3)

The UGO has been examining the components of binge eating disorder, episodic overeating and loss of control, in children. Because binge eating disorder is associated with significant psychopathology in adulthood, it is important to learn about the antecedents of BED to develop rational approaches to its prevention. The UGO has investigated the presence of binge-eating and its association with measures of psychopathology in a non-clinical sample of overweight (BMI>85$^{th}$ centile for age) African American and Caucasian children. None were undergoing weight-loss treatment. 69 children (35 males/34 females), ages 6-11 y, were interviewed using the adolescent version of the Questionnaire of Eating and Weight Patterns (QEWP-A). Subjects were

categorized into 4 groups according to their responses to the QEWP-A: those who reported one or more episodes of overeating plus lack of control; those who described episodes of loss of control alone, without overeating; episodic overeating without loss of control; or a no-symptom group. Those who reported overeating and/or loss of control were also asked to describe the most recent typical episode. Subjects were also compared on the Children's Depression Inventory (CDI), and the Children's Eating Attitudes Test (chEAT). Children endorsing loss of control, whether or not it was accompanied by overeating, had greater body mass index, body weight, and body adiposity than children with simple overeating episodes or no symptoms. Children endorsing episodes of loss of control also had more negative mood, and higher chEAT scores than those without loss of control. 4.3% of children met DSM-IV criteria (2) for Binge Eating Disorder. Described episodes, regardless of their characterization, were infrequent, and varied widely in caloric content and macronutrient composition. They tended to occur at meal times, and included foods normally consumed at meals. 60% of the described episodes occurred on occasions such as holidays and birthdays. We concluded that overweight children reporting loss of control have greater severity of obesity and more psychological distress than children who report episodic overeating without loss of control, or no such symptoms. Self-described episodes of binge-eating and loss of control are not uncommon in overweight children, but their descriptions of such episodes differ greatly from those of adults. In children these episodes occur infrequently, take place at meal times and are mostly contextual. Ongoing studies are using a more specific interviewer-based instrument, the Children's Eating Disorders Examination, to assess disordered eating behaviors and cognitions in overweight and normal weight children.

The UGO has also previously studied food selection and intake of obese women with binge-eating disorder.(7) Subjects with BED consumed significantly more energy than did subjects without BED with both binge meal instructions (2963 vs. 2017 kcal), $P < 0.005$ and normal meal instructions (2343 vs. 1640 kcal), $P < 0.02$ meals. During the binge meal subjects with BED consumed a greater percentage of energy as fat (38.9% vs. 33.5%, $P < 0.002$) and a lesser percentage as protein (11.4% vs. 15.4%, $P < 0.01$) than did subjects without BED. We concluded that obese women who meet criteria for BED show differences in both intake and macronutrient composition of food choices from obese women who do not meet these criteria when asked to eat in a laboratory setting. Studies anticipated to begin in the next year will examine food selection and intake of children who endorse loss of control and overeating.

Although dietary restriction almost invariably precedes the development of abnormal eating behaviors in patients with anorexia nervosa and bulimia nervosa,(8) the relationship between dietary restriction and disordered eating in BED is much less clear. Most studies investigating the temporal relationship between the development of binge eating and dieting in obese adults with BED have found that about half of all individuals with BED report that binge eating preceded their first diet.(3, 9-11) These studies, however, have the disadvantage of asking about the timing of each behavior retrospectively, and hence being subject to recall bias. Understanding the temporal relationship between binge eating, dieting, and the development of obesity has implications for both prevention and treatment, because binge eating may play a

significant role in either the development of obesity, or in its severity. The UGO is testing directly the hypothesis that binge eating behaviors can occur prior to the onset of obesity, and may be a contributing factor to the development of obesity through longitudinal studies of children at risk for the development of obesity.

**References:**


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